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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,932	02/16/2005	Rainer Oehl	202-055	5365

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EXAMINER	
AZIZ, KEITH	
ART UNIT	PAPER NUMBER
4122	
MAIL DATE	DELIVERY MODE
01/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,932	OEHL ET AL.	
	Examiner	Art Unit	
	KEITH T. AZIZ	4122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/22/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 38 objected to because of the following informalities: Claim 38 is listed as being dependant on claim 39, which does not exist, making claim 38 indefinite. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 20-23 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumgarten (U.S. Patent 4,118,162), hereinafter referred to as Baumgarten.

Baumgarten teaches a method for making reinforced tube shaped structures. The process as taught by Baumgarten includes continuously advancing sequentially coupled cylindrical mandrels (see items 1-3 in Figure 1 of Baumgarten) through an extrusion unit (see items 5-6 in Figure 1, as well as lines 12-17 of column 4 in Baumgarten), a reinforcement unit (see item 7 in Figure 1 and lines 17-18 of column 4 in Baumgarten), a cutting unit (see item 11 in Figure 1 and lines 24-27 of column 4 in Baumgarten), and a unit for removing the hose-shaped structures from the mandrel (see item 17 in Figure 1, as well as lines 31-37 in Baumgarten). Additionally, Baumgarten teaches that the mandrels are rigid and have a conical, peripherally extending, zone. See items 31-33 of Figure 2 and item 3 of Figure 1 in Baumgarten. Baumgarten further teaches a vulcanization unit (see item 15 of Figure 1, as well as the field of invention description in Baumgarten). It would have been obvious to one of ordinary skill in the art at the time of invention to produce the peripheral conical extension out of a different material, such as a less expensive or lighter material. The rationale to do so would have been the motivation to reduce costs and improve efficiency of the process as disclosed.

Additionally, as can be seen in item 11 of Figure 1, the cutting unit moves in a direction transverse to the longitudinal axis of the reinforced tube shaped structure. Furthermore, since Baumgarten teaches a cutting unit, it would have been obvious to place additional cutting units at any other point in the process. The motivation to do so would be to increase the precision of the cuts being made, and in order to utilize the same apparatus to produce varying sizes of hose-shaped tubular structures.

Baumgarden does not teach multiple cutting units, and does not teach processes with steps that occur in varying sequences.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to place additional cutting units at any point in time during the process, since it has been held that the duplication of parts has no patentable significance unless a new and unexpected result is produced. Since the result of adding an additional cutting unit would be known, addition of another cutting unit would have been obvious to one of ordinary skill in the art. See MPEP 2144.04 (VI)(B), In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Furthermore, it would have been obvious to one of ordinary skill in the art to re-arrange additional cutting units in a variety of configurations to create a similar process that only varied in the sequence that steps were performed. It has been held that, if all necessary steps are taught by a prior art process, then rearrangement of the steps is *prima facie* obvious; the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. See MPEP 2144.04(IV)(C), *Ex parte Rubin* , 128 USPQ 440 (Bd App 1959), *In re Burhans*, 154 F2d 690, 69 USPQ 330 (CCPA 1946) and *In re Gibson*, 39 F2d 975, 5 USPQ 230 (CCPA 1930).

4. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baumgarten (U.S. Patent 4,118,162), hereinafter referred to as Baumgarten, and further in view of Takubo et al. (U.S. Patent 4,863,653), hereinafter referred to as Takubo.

Baumgarten teaches the arrangement as discussed above.

Baumgarten does not expressly disclose the use of a gear pump for conveying the extruded rubber to an extrusion head.

Takubo teaches the use of a gear pump to convey material to an extruder. See lines 21-30 of column 3 in Takubo. Takubo and Baumgarten are combinable because they are concerned with a similar technological field, namely the extrusion of plastics and rubber. It would have been obvious to one of ordinary skill in the art at the time of invention to include a gear pump as taught by Takubo in the process as taught by Baumgarten. The rationale to do so would have been the motivation taught by Takubo, that a gear-pump minimizes pressure fluctuations at the outlet of the extruder, which in turn allows for a more structurally uniform and sound product. See lines 30-34 of column 3 in Takubo.

5. Claims 25-27 and 34-38 rejected under 35 U.S.C. 103(a) as being unpatentable over Baumgarten as applied to claims 20-23 and 30-32 above, and further in view of Reynolds et al. (US Patent 6,620,475), hereinafter referred to as Reynolds, Lietz (US Patent 6,508,972), hereinafter referred to as Lietz, and Salle et al (US Patent 4,197,071), hereinafter referred to as Salle.

Baumgarten teaches the method and arrangement as discussed above. Baumgarten does not expressly disclose continuous measurement of the mandrel speed, continuous measurement of the rubber from the extrusion unit, a fault marking unit for applying markings below a fault tolerance amount. Baumgarten also does not teach a method of controlling the thickness of the layering from the extrusion unit, a

method of spiraling filaments with a rotating bobbin creel, a method of measuring and controlling both mandrel speed and the thickness of materials applied, and a method utilizing optical detection to mark fault tolerance.

Lietz teaches a means for continuously measuring the advancement speed of the mandrels in a rubber tube manufacturing process as well as continuously measuring the thickness of the rubber layer applied during extrusion (See items 66 and 30of Figures 1 and 4of Lietz). Lietz further teaches controlling the rate of application of the extrusion unit in accordance with the measured advancement speed (see lines 14-47 of column 3 in Lietz). Lietz also teaches that both the advancement speed and the extrusion rate can be controlled through the same mechanism (see lines 47-54 of column 5 in Lietz). Lietz proposes controlling the rubber quantity through controlling the pressure in the injection head of the extrusion unit with a gear pump (see lines 27-29 of column 3 in Lietz).

Lietz and Baumgarten are combinable because they are concerned with a similar technical field, namely the production of tube-shaped structures. It would have been obvious for one of ordinary skill in the art at the time of invention to include the control and measurement methods taught in Lietz in the method and apparatus of Baumgarten. The rationale to do so would have been to ensure structural uniformity of produced articles, and to eliminate the need for additional equipment and reduce cost by allowing for varying thicknesses of tube-shaped structures (instead of having different machines to produce structures of varying thickness). See lines 10-16 of Column 3 in Lietz.

Lietz and Baumgarten do not teach a method of controlling the bobbin creel in the enforcement unit, and do not teach optical fault detection and marking.

Reynolds teaches a bobbin creel, as well as a method of controlling the bobbin creel speed, as well as a means for controlling the advancement speed of the mandrels during a tube manufacturing process. See item 24 in figure 1, as well as lines 45-53 of column 5 in Reynolds. Reynolds, Lietz, and Baumgarten are combinable because they are concerned with a similar technical field, namely the production of tube-shaped structures. It would have been obvious for one of ordinary skill in the art at the time of invention to include the bobbin creel control method as taught in Reynolds in the process of Lietz and Baumgarten. The rationale to do so would have been the motivation taught by Reynolds to produce filament layers with defined desired filament angels, which are controlled by the advancement speed of the mandrel as well as the rotational speed of the bobbin creel. See lines 12-45 of column 5 in Reynolds.

Reynolds, Lietz, and Baumgarten teach the process as described above. Reynolds, Lietz and Baumgarten do not teach a method for detecting faults, and do not teach a method for separating out the faulty sections of the tube-shaped structure.

Salle teaches a means for optically detecting faults, and a method for separating out faulty articles within a continuous process. Salle teaches a photocell for the detection of a fault during a continuous process, and a means for relaying faulty articles away from further processing. See items 32a and 32b in Figure 1, as well as lines 35-45 of column 6 in Salle.

Salle, Reynolds, Lietz, and Baumgarten are combinable because they are all concerned with a similar technological field, namely the production of tube-shaped structures. It would have been obvious for one of ordinary skill in the art at the time of invention to include a fault detection and separation method as taught by Salle in the process of Reynolds, Lietz, and Baumgarten. The rationale to do so would be to prevent the further processing and production of a faulty article, which would be cost effective and ensure a minimum standard. The marking of defective products is a well known and conventional practice, and it would have been obvious to one of ordinary skill in the art to mark faulty products that are separated out by the method as taught by Salle. The rationale to do so would have been the motivation to conclusively identify faulty products that were recognized by a photocell, so that the faulty products could be adequately disposed of or recycled.

6. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumgarten, Lietz, Reynolds, and Salle as applied to claims 20-27 above, and further in view of Masse (Netherlands Patent Application NL 1019773 and Netherlands Patent Application 1020109 – of which US Patent Application 2005/0144998 A1 is being used as an English translation), hereinafter referred to as Masse .

Baumgarten, Lietz, Reynolds, and Salle teach the process as taught above. Baumgarten, Lietz, Reynolds, and Salle do not teach an adjustable mandrel, and do not teach a mandrel with a length in the range of between one and eight meters. Masse teaches an adjustable mandrel.

Masse teaches an axially adjustable mandrel for use in a machine and process for forming tube-shaped structures. Lietz teaches a mandrel length in the range of thirty to thirty-eight inches, see lines 58-60 of column 4 in Lietz. Masse, Baumgarten, Lietz, Reynolds, and Salle are combinable because they are concerned with a similar technical field, namely the production of tube-shaped structures. It would have been obvious to one of ordinary skill in the art to include the adjustable mandrel as taught by Masse in the process as taught by Baumgarten, Lietz, Reynolds, and Salle. The rationale to do so would have been to create a structure of any desired length. Since Masse teaches an adjustable mandrel, it would have been obvious to one of ordinary skill in the art to utilize mandrels within the range of one to eight meters, as the length of the mandrel can be used to accommodate the tube-shaped structures desired length.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents are further cited to show the state of the art of hose-shaped structure forming processes and machines.

Dugger (US Patent 4,324,607), drawn to a hose building machine, and the nits of a hose building machine

Takeuchi et al. (US Patent 4,710,255), drawn to an apparatus for molding belts, notably the units of the apparatus.

Boyd (US Patent 5,335,167), drawn to a filament winding unit, which is integral in the processing of a reinforced hose-shaped structure.

Crabtree (US Patent 4,954,194), drawn to a method for producing a tubular structure, specifically an air-spring and sleeve.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH T. AZIZ whose telephone number is (571)270-7658. The examiner can normally be reached on Monday through Friday 8:00am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KTA/
Examiner AU 4122

/Timothy J. Kugel/
Primary Examiner, Art Unit 1796